

7.9.

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Terrence S. Kaufman

Research done since receipt of PhD degree, September 1963:

I Mayan family

1. Paper: The Position of Tzeltal-Tzotzil in Mayan (Aug 1965; ms). Essentially a new classification of the Mayan family based on a fairly completely elaborated theory of historical Mayan phonology and using much more lexical and grammatical information than any previous attempt at classifying the Mayan languages.
2. Work on comparative Mayan phonology (intermittently since Sept 1963 to the present). Based on about 1000 etymologies, which has succeeded in discovering all the regular sound correspondences and in reconstructing the structural features of proto Mayan phonology; certain features of the reconstruction could be placed on a more solid footing only with the use of considerably amplified data (which is not at present available).
3. Paper: Evidence for the Macro-Mayan Hypothesis (Nov 1964; ms). This paper examines the thesis that the Mayan, Mixe-Zoque, and Totonacan families form a (non-exclusive) genetic group, examining all the lexical and phonological similarities so far uncovered, and coming up with the conclusion that the hypothesis is probably sound, but inherently incapable of very detailed proof.
4. Mayan Etymological Dictionary Project (in progress). This project aims to compare standard lexical lists (with grammatical notes) of over 1400 items in all the Mayan languages in order to establish a basic core of Mayan etymologies. The work involves getting questionnaires filled out (9 out of 25 are done), punching cards with lexical items, and collating cognates. This will probably be a two or three year project, and has just

begun.

II Mixe-Zoque family

1. A comparative phonology, grammar, and dictionary of the Mixe-Zoque family was prepared in draft form in the first half of 1963. During the first half of 1965 the monograph entitled Mixe-Zoque Diachronic Studies has been revised in the text and the etymological dictionary expanded by about one-fourth.

2. "Reconstitution" of Tapachultec (March - April 1965).

Tapachultec is quite possibly extinct, and is attested in only 5 short and not very accurate word lists; but the application of philological methods to these lists, along with a knowledge of other languages in the family, allows one to salvage and interpret most of the extant material.

III Siouan family

1. Siouan etymological file (winter 1963-64); ca. 500 entries. This file incorporates all of Wolff's and Matthews' etymologies (250-300 in all) plus 200-250 new etymologies discovered by me. There are 13 Siouan languages.

2. Catawba lexical file (winter 1964). A slip file of every bit of published material on Catawba, including Speck's Catawba Texts. A lot of unpublished material on Catawba exists, so that this file is by no means complete.

3. Mandan lexical file (winter 1964). Includes all published (probably also extant) material on Mandan, which is quite amenable to the application of philological methods.

4. Reconstruction of proto Siouan phonology (winter-spring 1964). Although 2 formulations of comparative Siouan phonology are

in existence, both are subject to much improvement, which my studies have made.

(5. Dakota materials gathered during the course of 1964-65, while teaching 220.)

IV Uto-Aztecan

1. Uto-Aztecan etymological file (fall-winter 1964-65); ca. 500 items. Includes all the etymologies in Miller's unpublished study and in the Voegelins', Hales, and Whorf's published studies, plus a small number of etymologies discovered by myself.
2. Modifications of Uto-Aztecan comparative phonology (winter 1965). Some improvements and amplifications over Voegelins - Hale and Whorf have been made.
3. Cora-Huichol etymological file (winter 1965). An etymological vocabulary of the Coran subgroup (ca 200 sets).
4. Plateau etymological file (winter 1965). An etymological vocabulary of the Plateau subgroup (ca 250 sets).
5. Plateau comparative phonology (spring 1965). A detailed study of the comparative phonology of the Plateau group shows that a certain amount of simplification can be made in the Voegelins' and Hales' formulation.
6. Tarahumara morphophonemics (spring 1965).

V Other families.

1. Lencan linguistic materials (spring 1965). The two lencan languages are almost extinct but considerable data (up to 1910) exists on them. All extant data has been slipped and filed; philological methods are being applied to determine the phonological systems of the languages and to provide normalized

transcriptions of the morphemes and lexical items (ca 800-900 reconstitutions).

2. Matagalpa linguistic materials (fall 1963). Most of the data on the two varieties of this nearly-extinct language have been slipped, collated, and interpreted; the job is almost but not quite complete (ca 300 reconstitutions).

3. Xincan linguistic materials (spring 1965). Slipping and filing of all extant data on the two almost extinct Xincan languages has been begun.

(4. Tumbuka (Bantu) materials gathered during spring of 1964 while teaching a field methods course at Ohio State University.)

VI Field Work

1. Tzotzil syntax; one week in June 1965.

2. 5 Zapotec 100 word lists

3. 1 Chinantec 100 word lists

} 3 days in June 1965

Committee Work Done in Linguistics Department, University of California, Berkeley

1. Library Committee (1964-65)

2. Undergraduate Advisor (1965-66)

3. Scheduling Courses (1965-66)

Evidence for the Macro-Mayan Hypothesis

T. Kaufman

Handout to
accompany paper

proto-Mayan Phonemes

1. segments

C:	p	t	c	k	q	
		t ^y	č	k ^y		
stops	b	t ^w	c ^w	k ^w		plain and glottalized
					ʔ	
spirants			s	x	h	
			š			
resonants	m	n		ŋ		
		l				
	w		y			
V:	i	ʌ	u		v	
	e	a	o			

2. canons

H x h ʔ °

roots: CVC
CVHC
CVCVC
CVHCVC
CVCVHC

2a initial clusters ? + resonant

4 alternations

t-c-k

k-q

x-h

h-y

c-ç

Mayan Sound Correspondences

p s m n i e a o u remain unchanged in all languages.

All k's become c in Hua, otherwise k remains in all languages.

l becomes r in Lac and Chr, otherwise l remains in all languages.

pM *	b	p	t	t ^y	t ^w	c	č	c ^w	k	k ^y	k ^w	q	?
Hua	b		t,č	t,č	t,č	t	č	?		c		k	?,č
Lac	b	p	t,č	t,č	t,č	c,č	č	?	k	k,č	k	k	?
Chl	b	p		t		c	č	c	k		č	k	?
Tzo	b	p		t		c	č	c	k		č	k	?
Toj	p			t		c	č	c	k	č/k		k	?
Chj	p		t		č	c	č	c		č/k		k	?
Jac	p		t		č	c		c	k	k,č,c		x	?
Mam	b		t	c	č	c		c		k,k ^y ,č		q	?,č
Cak	b		t	č	t	c	č	c	k	k ^y	k	q	?
Pch	b		t	č	t,č	c	č	c		k		q	?
pM *	š	x	h	ŋ	y	ŋ y	Λ	w	?w				
Hua	š	h	h,?, w,b,y	w,h,?	y	y	a	w,b	?				
Lac	š	h	h	n	y	y	Λ,a	w	w				
Chl	š	h	h	n	y	y	Λ,a	w	w				
Tzo	š	x	h	n	y	y	o	w	w				
Toj	š	h	h	n	y	y	a	w	w				
Chj	š	h,?	h,č	ŋ	y	y	a	w	w				
Jac	š	h	h	ŋ	y	y	a	w	w				
Mam	š	x	?,č	x	č	š	a	w	w				
Cak	š	x	w,y	x	r	y	a	w	w				
Pch	š	x	h,č	x	r	y	a	w	w				

pM	*CVC	CV'C	CV?C	CVhC	CVxC
Hua	CVC	CV'C	CV'C	CV'C	?
Lac	CVC	CVVC	CV?VC	CVVC	CVVC
Chl	CVC	CVC	CVC	CVhC	CVhC
Tzo	CVC	CVC	CVC	CVC	CVC
Toj	CVC	CVC	CV?VC	CVC	CVhVC
Chj	CVC	CVC	CV?VC	CVC	CVhVC
Jac	CVC	CVC	CVC	CVC	CVhVC
Mam	CVC	CV'C	CV?C	CV'C	CVxC?
Cak	CVC	CV'C	CV'C	CV'C	CVxC
Pch	CVC	CV'C	CV'C	CVhC	CVxC

proto Mixe-Zoque phonemes

1. segments

C:	p	t	c	k	ʔ
			s		h
	m	n			
			y	w	
V:	i	ʌ	u		
	e	a	o		

2. canons H e ʔ .

roots CVC
 CVHC
 CV(H)CV(C)
 CVhCV(C)
 CVsCV(C)

proto Totonacan phonemes

1. segments

C:	p	t	ʔ	c	č	k	q
			ɬ	s	š	x	
	m	n					
		l					
	w		y				
V:	i	u	v				
	a						

2. alternations

ʔ~c~č	[ç]
ɬ~s~š	[s]
k~q	[k]

CVC correspondences

to ADVISE	Mn	To
to ASK FOR/WANT	Mn	To
BIRD	Mn	To
BLACK/RED	Mn	To
BONE	Mn	MZ
ELDER BROTHER	Mn	MZ
BUZZARD	Mn	To
BIG CAT	Mn	MZ
CLAW/NAIL	Mn	MZ
COATI	Mn	To
to COME (1)		MZ To
to COME (2)	Mn	To
to CURE	Mn	MZ
to DANCE	Mn	MZ
*DEAF	Mn	MZ To
*DOG	Mn	MZ (To)
to DRINK	Mn	MZ
DRY	Mn	MZ
*to EAT/BITE/ GRIND/SWALLOW	Mn	MZ To
to EAT	Mn	MZ
FEATHER		MZ To
to FINISH	Mn	MZ
FIRE	Mn	To
FISH	Mn	To + Huave
to FRY	Mn	To
GNAT/FLY	Mn	MZ
to GO	Mn	To
to GO and RETURN	Mn	MZ
to GRAB	Mn	MZ
to GRIND	Mn	MZ
to GRIND/SHELL (CORN)	Mn	To
*HAIR	Mn	MZ To
to HEAR		MZ To
HURT/INJURY	Mn	To
LIFE/ANIMAL/ BREAST	Mn	To

CVC

LINE/ASHES		MZ	To	
to LOOK FOR	Mn	MZ		
LINE (Cal)	Mn		To	
MAN/EYE	Mn	MZ		
MANGE	Mn		To	
MONKEY	Mn		To	
NECK	Mn	MZ		
NEST	Mn		To	
NOSE		MZ	To	
ONE		MZ	To	
*PLANK/BED	Mn	MZ	To	
to PILE UP	Mn		To	
to PASS	Mn	MZ		
*to REST	Mn	MZ	To	
to RIP		MZ	To	
ROUND	Mn	MZ		
*to SAY	Mn	MZ	To	
*to SEE	Mn	MZ	To	
SEED		MZ	To	
to SHAVE	Mn	MZ		
SIBLING	Mn	To		
*SMALL	Mn	MZ	To	(symp?)
SNAIL		MZ	To	
SNAKE	Mn	MZ		
to SOW	Mn		To	
SPIDER	Mn	MZ		
SQUIRREL	Mn	MZ		
STINGY	Mn	MZ		
*(GRIND) STONE	Mn	MZ	To	+ Huave
SWEET POTATO		MZ	To	
to TIE		MZ	To	
*TOBACCO	Mn	MZ	(To)	
TOOTH		MZ	To	
TREE		MZ	To	
*VINE/CORD	Mn	MZ	To	
WHITE	Mn		To	

CVC+ correspondences

to BEGIN		MZ	To		CVC(V)
BELLY	Mn	MZ			CVC(V)
CANE	Mn	MZ			CVC[VC
FAR	Mn		To	+ Huave	CVC[(V)C
KNEE		MZ	To	+ Huave	CVCV
PIG	Mn	MZ			CVCVC
SALT	Mn		To		CVCVC
STAR		MZ	To		CVCV
to STEAL	Mn		To		CVCVC

CV correspondences

COLD	Mn		To	
* to FIND	Mn	MZ	To	
FIRST	Mn	MZ		
to GO UP		MZ	To	
to GRASP	Mn		To	
MOSQUITO	Mn		To	
* SOUR/BITTER	Mn	MZ	To	
SIDE	Mn	MZ		
to SLEEP/DREAM/ LIE DOWN		MZ	To	
to TWIST		MZ	To	
FLY	Mn	MZ		
to GO DOWN	Mn	MZ		
* to EAT/TORTILLA	Mn	MZ	To	
* WHITE/MOON	Mn	MZ	To	

CV[C correspondences

* to BREAK/POUND/ HIT/CRUSH	Mn	MZ	To	(symb?)
* to BUY/SELL/ GIVE	Mn	MZ	To	
to CARRY	Mn		To	
to EXTINGUISH	Mn	MZ		
HAND	Mn	MZ		
HARD		MZ	To	
* to LAUGH	Mn	MZ	To	(symb?)
POT	Mn	MZ		
to RIPEN	Mn	MZ		
* SAND/DUST	Mn	MZ	To	(symb?)
SICK/PAINFUL	Mn	MZ		
SKUNK	Mn	MZ		
SWEET/HONEY	Mn	MZ		
to SWELL	Mn	MZ		(symb?)
THREE		MZ	To	
UPRIGHT/STANDING	Mn	MZ		
*to WASH	Mn	MZ	To	
ELBOW	Mn	MZ		
to DIE	Mn	MZ		

* to BARK	Mn	MZ	To	CV(C)
to BELCH	Mn		To	CV[C
* BELLY/INTESTINE LUNG	Mn	MZ	To	CV[C
to BLOW		MZ	To	CV[C
TO BURN/SHINE	Mn	MZ		CVC
* to COUGH	Mn	MZ	To + Huave	CVCV
* to DRIP	Mn	MZ	To + Huave	CVC
* EXCREMENT	Mn	MZ	To	CV(C)
PUS	Mn	MZ		CV[C
to SHOOT	Mn	MZ		CVC
to SNEEZE	Mn	MZ		CVCVC
small	Mn	MZ		CVC
* to SPIT	Mn	MZ	To	CVC
to STRANGLE	Mn	MZ		CVC
* to SUCK/NURSE/ KISS	Mn	MZ	To	CV[C, CVC
to TICKLE	Mn	MZ		CVCVC
to URINATE	Mn		To + Huave	CVC
to WHISTLE	Mn	MZ		CV[C

items possibly diffused

ALLIGATOR		MZ	To + Tarascan	CVCCV
	M			
ATOLE	Mn	MZ		CVC
ZAPOTE/PLANTAIN	Mn		To	CVCVC
CHILD	Mn	MZ		CVCV
* DEER	Mn	MZ	To	CVCV
DRAGONFLY	Mn		To	CVCVC
* FATHER	Mn	MZ	To + Huave	CVC
FOX (1)	Mn	MZ		CVC
FOX (2)	Mn	MZ		CVC
HONEYCOMB	Mn	MZ		CVCVC
* INCENSE	Mn	MZ	To + Huave	CVC
PARRAKEET	Mn	MZ	+ Huave	CVC
RABBIT		MZ	To + Huave	CVC
* R.T/MOUSE	Mn	MZ	To + Huave	CV[C
TWENTY		MZ	To	C(V)C
AVOCADO	Mn	MZ		CVC

Uto-Aztecan Family

A. Plateau Group

- 1a Mono (Monos, Owens Valley Paiutes)
- b Northern Paiute (Northern Paiutes, Bannocks)
- 2a Panamint
- b Shoshone (Shoshones, Gosiutes)
- c Comanche
- 3a Kawaiisu
- b Ute (Utes, Chemehuevis)
- c Southern Paiute

B. Tubatulabal

C. Southern California Group

- 1a Luiseño (Luiseños, Juaneños)
- b Gabrielino (Gabrielinos, Fernandinos) [extinct?]
- 2a Cahuilla
- b Cupeño
- 3 Serrano

D. Hopi

E. Piman Group

- 1a Papago (Papagos, Pimas)
- b Tepecano
- 2a Northern Tepehuán
- b Southern Tepehuán

F. Yaguian Group

1a Tarahumara

b Varohío

2a Cáhita (Yaguis, Mayos)

b Ópata [extinct?]

G. Coran Group

1. Cora

2. Huichol

H. Aztecan Group

1. Aztec (Nahuas, Pipiles)

2. Pochuteco [extinct?]

phonemic systems

3

Mono

p	t	c	k	k ^w	ʔ	i	ʌ	u
			q	q ^w		e	a	o
		s	x		h			
m	n							
		y		w				

k and q, k^w and q^w are mostly in CD

very few words end in a consonant

x, -ww-, -yy- are rare

CV

CVCV

CVC₂C₂V (=Lamb CVhCV)

||hw|| = /qg^w/ ||hy|| = /tt/

Comanche

p	t	c	k	k ^w	ʔ	i	ʌ	u	V [•]
-v	-r	y		w		e	a	o	
		s			h				
m	n								

few or no words end in a consonant

-hw-, -hy- are rare or non-occurring

CV

CVCV

CV[•]CV

CVhCV

Southern Paiute

p	t	c	k	k ^w	-ʔ-	i	ʌ	u
-v-	-r-		-g-	-g ^w -		a	o	
		s						
m	n		ŋ	-ŋ ^w -				
		y		w				

no word ends in a consonant

CV

CV[•]CV₁V₁

} contrast not sure

CVCV

C₁VⁿC₂V where C₂ = |p t c k k^w|

Tubatulabal

p	t	ʦ	ʧ	k	ʔ	i	ʌ	u	V [•]
-b-	-d-	-z-	-ʒ-	-g-		e	a	o	
		ʃ			h				
m	n			ŋ					
w	l		y						

e is rare

ʧ, ʒ are rare

l is rare initially

CV

CV[•]

CVC(V)

CV[•]C(V)C₁VⁿC₂(V) where C₂ = p/b t/d c/z k/g h w

Luisen̄o

p	t	č	k	q	k ^w	ʔ	i	u	V [·]
	s	š		x	x ^w	h	e	o	√
v	ʃ							a	
	r								
	l	y			w				
m	n		ŋ						

v ʃ l x x^w are rare initially

e o are rare or non-occurrent
in unstressed syllables

CV (?)

CV[·]

CVC(V)

CV[·]C(V)

Cahuilla

p	t	č	k	q	q ^w	ʔ	i	u
	s			x	x ^w	h	e	
v	l	l̥						a
m	n	ñ	ŋ					
	r	y			w			

o occurs in loans from Spanish

r is rare

CV

CVC(V)

v x l x^w are rare initially

6

Serrano

p	t	-t̄	č	k	q	kʷ	ʔ	i	ʌ	ə	u
v	ʃ							a	a		
	s	ṣ	š		x	hʷ	h				
	l		ɬ							V̄	
m		n	ñ	ŋ							
	r		ɣ			w					

e o ʃ q occur in loans from Spanish

v ʃ x are rare initially

r ɬ l s š hʷ are rare

CV(?)

CV̄

CVC(V) CVCV̄

CV̄C(V) CV̄CV̄

Hopi

p	t	c	k	q	kʷ	ʔ	i	ʌ
-v	r	ɣ			w		ə	o
		s			h		e	a
m	n		ŋʸ	ŋ	ŋʷ			
	l						V̄	V̄

CV

CV̄

CVCV

CV̄CV̄

Few words end in a consonant

||V̄:|| = V̄: ~ V̄̄

||V|| = V ~ V̄ ~ V̄̄

Papago

p	t		č	k	ʔ	i	ʌ	u
b	d	-d	č̣	g			a	o
	s	š		h				
m	n	ñ				V·	✓	
v	ɛ							

CV (?)

CV·

CVC(V)

CV·C(V)

except in word final position,

č č̣ ɛ s ñ occur before V_ht d ɖ š n occur before V_ɛ

Northern Tepehuán

p	t		k	-ʔ	i	ʌ	u
b	d		g			a	o
	s	š		h			
m	n	ñ					
v	r						

Few or no words end in a consonant

CV

CVCV

(others ?)

Tarahumara

p	t	č	k	ʔ	i	u
b	ʔ		g		e	o
		s		h		a
m	n					
w	r	y				

CV

CVCV

no word ends in a consonant

i and e are neutralized in
unstressed position

Cáhita

p	t	č	k	b ^w	ʔ	i	u
		s			h	e	o
v	ɬ						a
	r	y		w			
m	n						

CV, ʔV,

CV, ʔV,

CVCV

CV·CV

Few words end in a consonant

9

Cora

p	t	ʔ	č	k	ʔ	i	ʌ	u
p ^w			č ^w	k ^w		e	a	
			ʃ		h			
v	r		ɣ	w		✓	V [•]	
m	n							
m ^w								

[canons not worked out]

Few or no words end in a
consonant

Huichol

p	t	c	k	k ^w	ʔ	i	ʌ	u
		ʃ			h	e	a	
w	r	ɣ						
m	n							

V[•] + pitch and stress
phenomena

[canons not worked out]

Few or no words end in a
consonant

Aztec

p	t	(χ)	ϕ	$\tilde{\chi}$	k	k ^w	h = ?
		- ℓ	s	\tilde{s}	}	w	
m-	n			y			

i	o	V.
e	a	

only n, k, and ? are frequent
finally

some dialects lack χ , having t in its
place

CV

CV.

CVC(V)

CV.C(V)

CVCV.

CV.CV.

h = ? ('saltillo') is [ʔ] in some
dialects, [h] in others. those with [h]
have usually shifted some allophones of /w/
to [h] as well.

proto phonemes

consonants

p	t	c	k	k ^w	ʔ
(v)		s			h
m	n		ŋ	(ŋ ^w)	
	-l-				
	-r-				
		ɣ		w	

vowels

i	u	}	or	{	i	ʌ	u
e	o				a	o	

patterns

roots

C, \check{V}

C, \bar{V}

$C, \check{V} C_2 V$

$C, \bar{V} C_2 V$

$C, \check{V}^n C_2 V$

where C_2 = oral stop/affricate

affixes (?)

C

CV

morphophonemics

alternations

$CVCV \sim CV^n CV$

$C\check{V}CV \sim C\bar{V}CV$

$\|t\| \rightarrow i / c$

$--- / t$

$s \sim c$ (conditions unclear)

stem-final morphophonemic

vowels

V^n

V^x

V^o

code for environments noted in sound
correspondence charts

g	conditioning is grammatical
s	by sound symbolism
ʈ	conditions not yet worked out
↑	before a high vowel (*i, *e, *u)
←	before a front vowel (*i, *e)
i	before *i
e	before *e
↓	{ (initial) before a low vowel (*a, *o) (medial) between low vowels
a	before *a
o	before *o
c	before a consonant
ʊ	unstressed
m	in monosyllables
k	after k
y o	after y

initial consonants

		*p	*v	*t	*c	*s	*k	*k ^w
Mon	A1a	p	p	t	c	s	k; g [↓]	k ^w ; g ^w ↓
Com	A2c	p	p	t	c	s	k	k ^w
SP	A3c	p	p	t	c	s	k	k ^w
Tub	B	p	p	t	ɕ	ʃ	k; h [↓]	w
Lui	C1a	p	p	t	ɕ	ʃ; s ^s	k; g [↓]	k ^w
Cah	C2a	p	p	t	ɕ	s	k; g [↓]	g ^w
Ser	C3	p	p	t	ɕ	ʃ/h [≠]	k; g ^{a, e} ; k ^w	k ^w
Hop	D	p	p	t	c	s	k; g [↓]	k ^w
Pap	E1a	v	v	t; ɕ [↑]	ʃ; s [↑]	h	k	b
NT	E2b	v	v	t	s/ʃ [≠]	h	k	b
Tar	F1a	p/b ^g	p/b ^g	t/ɕ ^g	ɕ	s	k/g ^g	w
Cáh	F2a	p	v; p ^g	t	ɕ	s	k	b ^w
Cor	G1	p; p ^w	h; p ^g	t	ɕ	ʃ	k; ɕ [←]	k ^w ; ɕ ^w ←
Hui	G2	p	h; p ^g	t	c	ʃ	k	k ^w
Azt	H1	p	ɕ; p ^g	t	ɕ; ɕ ⁱ	s; ʃ ⁱ	k	k ^w

[ɕ^a]

15
initial consonants

	*p	*h	*m	*n	*ŋ	*w	*y
Mon	p	h	m	n	ŋ	w	y
Com	p	h	m	n	ŋ	w	y
SP	ɸ	ɸ	m	n	ŋ	w; ɸ°	y
Tub	p	p	m	n	ŋ	w	y
Lui	p	h	m	n	ŋ	w	y
Cah	p	h	m	n	ŋ	w	y
Ser	p	h'	m	n	ŋ	w	y
Hop	p	h	m	n	ŋ	w; ɸ↓	y
Pap	p	p	m	n; ñ↑	n; ñ↑	ɸ	d; ɸ↑
NT	ɸ	ɸ	m	n	n	ɸ	d
Tar	p	h/p ^g	m	n	n	w; ɸ°	y/p ^g
Cáh	p	h	m	n	n	w	y
Cor	ɸ	ɸ	m; m ^{w^a}	n	n	w; h°; v ^e	y
Hui	p	p	m	n	n	w; h°	y
Azt	ɸ	ɸ	m	n	n	w; ɸ°	y

16
medial consonants

	*p	*v	*t	*c	*s	*k	*k ^w
Mon	pp	p	t/tt ^g	c/cc/h ^g	ss/cc/h ^g	g/gg ^g k/kk ^g	g ^w /gg ^w k ^w /kk ^w
Com	p/hp ^g	v	r/t/ht ^g	c/hc/ɔ ^g	s/h ^g	k/hk ^g	k ^w /hk ^w
SP	p	v	r/t ^g	c/ɔ ^g	s/ɔ ^g	g/k ^g	g ^w /k ^w
Tub	p/b ^g	p/b ^g	ɬ	ɕ	ʃ	k/g ^g ; h [↓]	w
Lui	p	v	ɬ	ʃ; s ^s	ʃ; s ^s	k; x [↓]	k ^w
Cah	p	v	ɬ/ɬ [≠]	s	s	k; x [↓]	g ^w
Ser	p	v	t̥	ʃ/h [≠]	ʃ/h [≠]	k; g [↓] ; x ^{bc}	k ^w
Hop	p	v	t	c	s	k; g [↓]	k ^w
Pap	p	v	t; ɬ [↑]	ʃ; s [↑]	h/ɔ [≠]	k	b
NT	p	v	t	s/ʃ [≠]	h	k	b
Tar	p/b ^g	p/b ^g	t/r ^g	ɬ	s	k/g ^g	w
Cáh	p	v	t	ɬ	s	k	b ^w
Cor	p	h	t	ɕ	ʃ	k; ɬ [←]	k ^w ; ɬ ^w
Hui	p	ɔ	t	c	ʃ	k	k ^w
Azt	p	ɔ	t; ɬ ⁽ⁱ⁾ [ɬ ^a]	ɕ; ɬ ⁱ	s; ʃ ⁱ	k	k ^w

after *e, *c merges with *g in groups B, C, D

17
medial consonants

	*p	*h	*l	*r	*w	*y	*m	*y ^w
Mon	?	h	n/nn ^g	?	w/gg ^{wg}	y	m/w/mm ^g	?
Com	Q	h	n/hn ^g	?	w/Q ^g	y/Q ^g	m/hm ^g	?
SP	Q	Q	Q/n ^g	?	Q	y/Q ^g	Q/m ^g	?
Tub	?	h	n	l	w	y	m	ɣw
Lui	?	h	n	?	w	y	m	ɣ
Cah	?	Q;h ^c	n	?	w	y	m	w
Ser	?	h	n	?	w/Q [†]	y/Q [†]	m	w
Hop	?	h/Q [†]	n	r	w;l [↓]	y	m	ɣ ^w
Pap	?	Q	d;l [↑]	d;l [↑]	g	d;ɣ [↑]	m	g
NT	Q	h	r	r	g	d	m	Q
Tar	?	h	r	r	w	y	m	w
Cáh	?	h	l;r ^s	l;r ^s	w	y	m	w
Cor	Q	Q	?	r	w;v [←]	y/r ^g	m;m ^{w a}	?
Hui	Q	Q	Q	r	w	y	m	w
Azt	Q	Q	l	l	w	y;ɣ ^c	m	?

medial nasals and nasal clusters

	*n	*ŋ	*mp	*nt	*nc	*ŋk	*ŋk ^w
Mon	n/nn ^g	n/nn/mm ^g	pp	tt	ss	kk;gg [↓]	kk ^w ;gg ^w [↓]
Com	n/hn ^g	n/hn ^g	p	t	ʔ	k	k ^w
SP	ʔ/n ^g	ʔ/ŋ ^g	mp	nt	p	ŋk	ŋk ^w
Tub	n	ŋ	mb/mp ^g	nd/nt ^g	nz	ŋg/ŋk ^g ;ŋh [↓]	?
Lui	n	ŋ	p	t	ʔ	k;g [↓]	?
Cah	n/ñ [‡]	ŋ	p	t	ʔ	k;g [↓]	?
Ser	n/ñ [‡]	ŋ	p/hp [‡]	t	ʔ	k;g [↓]	?
Hop	n	ŋ ^y ;ŋ [↓]	p	?	s	k;g [↓]	?
Pap	n;ñ [↑]	n;ñ [↑]	p	?	h/ʔ [‡]	k	?
NT	n	n	p	?	h	k	?
Tar	n	n	p	?	s	k	?
Cáh	n	n	p	?	s	k	?
Cor	n	n	p	?	ʃ	k	?
Hai	n	n	p	?	ʃ	k	?
Azt	n	n	p	?	ʃ ⁱ	k	?

19
vowels and length

	*i	*e	*u	*o	*a	* \bar{V}	* \check{V}
Mon	i	Λ	u	o	a/e †	\check{V}	\check{V}
Com	i	Λ	u	o	a/e †	\check{V}	\check{V}
SP	i	Λ	u	o	a	$\check{V}; \bar{V}^m$	$\check{V}; \bar{V}^m$
Tub	i	Λ	u	o	a	?	?
Lui	i	o; u ^v	u	e; i ^v	a	\bar{V}	?
Cah	i	e	u	i	a	\check{V}	\check{V}
Ser	i	Λ; θ ^{k†}	u	θ	a/a †	\bar{V}	?
Hop	i	Λ	u	θ	a/e †	\bar{V}	\check{V}
Pap	i	Λ	u	o	a	?	?
NT	i	Λ	u	o	a	?	?
Tar	i	e; i ^v	u	o	a	\check{V}	\check{V}
Cáh	i	e	u	o	a; e ^y	$\bar{V}; \bar{V}^p V_1^m$	$\check{V}; \bar{V}^p V_1^m$
Cor	i/e †	e/a †	Λ	u	a	?	?
Hui	i	e	Λ	u	a	?	?
Azt	i	e	i/e †	o	a/e †	\bar{V}	\check{V}

Final vowels are lost in Tub, Lui, Cah, Ser,
Pap, Azt

Feb 1965

Siouan Languages

I. Missouri River (= Missouri = Western = Crow-Hidatsa) Branch

1. Hidatsa
2. Crow

II. Mandan

III. Missouri Valley (= Mississippi = Central) Branch

A Central Missouri Valley (= Mid Central = Chíwere-Winnebago) Group

1. Winnebago /hočágara/
2. Oto /tíwere/ (Ioways, Otos, Missouris)

B Southern Missouri Valley (= South Central = Dhégíha) Group

1. Omaha /šégíha/ (Omahas, Poncas)
2. Osage /šegáha/ ~ /yegáha/ (Osages, Kansas)
3. Quapaw <Akansa> /akáza/ (?)

C. Northern Missouri Valley (= North Central = Dakota) Group

1. Dakota /dakhóta/ (Tetons, Yanktons, Santees, Assiniboinis)

IV. Ohio Valley (= Ohio = Eastern) Branch

1. Ofo
2. Biloxi
3. Tutelo

Phonemic Systems

Winnebago (analysis A)

pʔ	tʔ	(ʧʔ)	kʔ	sʔ	ʃʔ	xʔ	ʔ	i	u	ɛ	ʉ
p		č	k	s	š	x	h	e	o		
-b	t	j	g	z	ž	ɣ		a		a	
w	r	[y]									
m	n										

✓

Winnebago (alternate analysis) ^{stress} [vowels are the same]

m	n	(it may be that [n] is the allophone of /r/ before V _n)									
w	r	[y]									
ph		čh	kh	sh	šh	xh	h	[p', č', etc]			
pʔ	tʔ	(ʧʔ)	kʔ	sʔ	ʃʔ	xʔ	ʔ				
-p	t	č	k	s	š	x		[b, d, etc]			

other clusters:

kw [kV₂w]

sk, šk, kč, čk, šč

pr [pV₂r]

ps, ks, kš

and so on, with

pn, kr, kn, sr, sn, šr, šn, xr, xn

sw, šw, xw

xʔ ~ xk

$$\begin{matrix} w \\ m \end{matrix} \begin{cases} r \\ [n] \end{cases} - V_n$$

✓

p t k [b d/ž ɣ]

ph th kh [p^c t^c/t̪^c k^c]

$$S \quad \tilde{z} \quad x \quad [z/\tilde{x} \quad \tilde{z}/y \quad x] \left(\frac{V}{\#} \right) - V$$
$$[s/\theta \quad \frac{v}{s} \quad x] \rightarrow C, C_{\text{control}}$$
$$s_h \quad s_h \quad x_h \quad [s/\theta \quad s \quad x] \begin{pmatrix} V \\ \# \end{pmatrix} - V$$
 $t^2 \quad [t'] \quad [x']$

sh [s] ~ [θ]

$$r \quad [r] \sim [\ell]; \quad [n] = V_n$$

5 $[z] \sim [\delta]; \sim [h] - C$

$$x^2 \sim x^k$$
$$\frac{x}{y} \quad [x] \sim [y]$$
$$kS \sim PS$$

Omaha

p ^ʔ	t ^ʔ			ʃ ^ʔ		ʔ	i	u	ɿ
p	t	k	s	ʃ	x	h	e		
b	d	g	z	ž	ɣ		a		ə
m	n								
w	ʒ						√		

Osage

p ^ʔ	t ^ʔ	k ^ʔ					i	u	ɿ
p	t	k	s	ʃ	x	h	e		
b	d	g	z	ž	ɣ		a		ə
m	n								
w	ʒ						√		

t = [t] [c]

d = [d] [z]

t^ʔ = [c^ʔ]

ə = [ə]

u = [u] [o]

s = [s] ~ [θ]; ~ [h] - C

Dakota (Yankton)

p t č k s š x $\begin{cases} p \\ h \end{cases}$

$\begin{cases} b \\ [m] \end{cases}$ $\begin{cases} d \\ [n] \end{cases}$ -V_n

w y i u ɛ ʉ
e o ɛ ʉ
a ɛ
✓

sh šh xh [s š x] $\begin{pmatrix} V \\ \# \end{pmatrix} -V$

s š x [s š x] -C, C-
[z ž ʒ] $\begin{pmatrix} V \\ \# \end{pmatrix} -V$

6

Hidatsa

p	t	c		k	ʔ	i	u
			š	x	h	e	o
w	r					a	

V. V̂

Crow

p	t	c		k		i	u
		s	š	x	h	e	o
w	r					a	

V. V̂

Mandan

p	t		k	ʔ	i	u	ɿ	ʉ
	s	ʃ	x	h	e	o		
w	r				a		ə	
[m]	[n]	-V _n			V [*]	V̂		

[an alternate analysis would write V^{*} as V, and specify clusters with /r/ and /w/ as having a predictable epenthetic vowel, always short, and of specifiable quality]

Ofo

p	t	{ ɕ	k	ʔ	i	u	ɿ	ʉ
f	s	{ [ʃ]		h	e	o		
{ b	{ d	{ ʝ			a		ə	
{ [w]	{ [l]	{ [y]			V̂			
m	n							

Biloxi

p	t	{	č	k	p	i	u	ɔ	ʉ
	s	{	[ʃ]	x	h	e	o		
w	{	d					a		ə
	{	[e]							
m	n					✓			

Tutelo

p	t	c	k	p	i	u	ɔ	ʉ
		s	x	h	e	o		
						a		ə
{	w	{	l					
{	[m]	{	[n]	-V _n	γ			

✓

proto Siouan phonemes

p	t	k	ʔ	i	u	ɿ	ʉ
	s	ʃ	x	ɛ	o		
w	r	y		a		ə	
				̄			

alternations

S	s ~ ʃ ~ x	[active in most languages]
R	r ~ y	} [moribund or vestigial; in some cases only identifiable through comparative materials]
Ř	r ~ y ~ ʃ	

C ~ 'C

canons

roots		affixes
CV	CVh	CV
CCV	CCVh	CCV
CVCV	CVCCV	
CCVCV	CCVCCV	

[canons]

noun stems

wC... etc

wa + root

*[w] *[r] *[y] probably do not ^{occur} intervocally within roots

most if not all occurrences of initial *wC clusters involve a nominal prefix *w- which is moribund or vestigial in most or all of the languages.

proto Siouan clusters

		$C_2 \rightarrow$										
		w	p	k	s	š	x	t	r	y	ʔ	h
									-wr-			-w _h -
C_1	w	w.w	wp	wk	ws	wš	wx	wt	wr	wy	>w	wh
↓	p	#	#	pk?	ps	pš	px	pt	pr	py	pʔ	ph
	k	#	kp	#	ks	kš	kx	kt	kr	ky	kʔ	kh
	s	#	sp	sk	#	#	#	st	sr	sy	sʔ	#
	š	#	šp	šk	#	#	#	št	šr	šy	šʔ	#
	x	#	xp	xk	#	#	#	xt	xr	xy	xʔ	#
	t	#	tp	tk	#	#	#	#	#	#	tʔ	th
	r	#	#	#	#	#	#	#	#	#	#	#
	y	#	#	#	#	#	#	#	#	#	#	-y.h-
	ʔ	#	#	#	#	#	#	#	#	#	#	#
	h	#	#	#	#	#	#	#	#	#	#	#
		'w	'p	'k	's	'š	'x	't	'r	'y	#	'h?

clusters where C_1 is |w| or |y| occur only initially, with the noted exceptions. |.| marks a morph boundary

code for environments noted in sound correspondence charts

A || B A _oral vowel
 B _nasal vowel

A/B/C A initial
 B medial
 C final

A ~ B freely varying or non-contrastive
 or A in some dialects, B in others

< > presumably

‡ conditions not yet worked out

g conditions are grammatical

f after front vowels

← before front vowels

vr before a rounded vowel

vu before a non-rounded vowel

pS	Wi	Ot	Om	Os	Da
*k, * kh	[g]	k	g	g	k; č ^f
*wk, *<k	[k]	kh	k	k	kh; čh ^f
*xk	[k]	kh		k	k
*w	w; h [†] w; m; h [†]	w m; w [†]	w m; w [†]	w m; w [†]	w
*ww, * ^c w	w; [b]† m	p m	m	b m	w; b† [m]
*p	w/ / [b]	p/w	b	b	p
*kp	[kV ₂ w]	kw	p	p	kp
*- wh -(≡-hw [?])	w	w	h	p; p ^š ←	ph
*ph	w/[p]	w	h	p; p ^š ←	ph
* ^c p, *wp	[p]/	ph/	p/	p/	ph/
*px [hy	pothetical]				
*h-, *wh-	h	h	h	h	h; ʔ [†]
*- ^c h-	h	h	h	h	h
*-h-	h	h	ʃ h	ʃ h	y ^{vu} ; w ^{vu} h
*-h#	ʔ	ʔ	ʔ	ʔ	ʔ
*r	r n	r [n]	ʃ	ʃ	y
*t	[j]	t	d	d	t
*th	[ʃ]/[j]	th	t/th	t/tx~kx	h
*t, *wt	[ʃ]	th	t	t	th
*pt	[ʃ]	th	t	t	pt
*tp	[ʃV ₂ w]	tw	t	t	tp~kp
*tk	[ʃg]	ht	t	t; k [†]	tk

pS	wi	ot	Om	Os	Da
*c _r	[d] n	t [n]	n n; ʃ [‡]	n n; ʃ [‡]	d [n]
*w _r -	[d] n	t [n]	n	d n	bd [mn]
*-w _r -	[d] n	t [n]	bʃ; n	bʃ; d̥ bʃ	bd [mn]
*pr	[pV ₂ r] [p/zn]	pr	bʃ	bʃ	bd [mn]
*py		<pr>	<bʃ>	<bʃ>	<pč>
*y	r n	r [n]	ʃ; ž n	ʃ; ž n	čh
*c _y , *w _y	r n	[ž]	ž	ž	čh
*-llyhll-				ʃ	h
*s	[z]	[z]	z	z	[z]
*ws, *c _s	[s]	[s]	s	s	[s]
*ps	[s]/ps			s	ps
*ks	ks	ks	s	s	ks
*š	[ž]	[ž]	ž	ž	[ž]
*wš, *c _š	[ʃ]	[ʃ]	ʃ	ʃ	[ʃ]
*pš					pš
*kš	kš	kš	š	š; kš [‡]	kš
*x	[ɣ]	x	ɣ	ɣ	[ɣ]
*wx, *c _x	<[x]>	[x]	x	x	[x]
*kx				x	[x]

pS	Wi	Ot	Om	Os	Pa
*?	(?)	(?)			(?)
*p?	p?	p?	p?	p?	p?
*t?	t?; t? g	t?	t?	[c?]	t?
*k?	k?	k?	?	k?	k?; c? f
*s?	s?				s?
*š?	š?	š?	š?	[c?]	š?
*x?	x? ~ [xg]	x? ~ kh	?	k?	x?
*kr	[kV _{2r}] [kV _{2o}]	kr	gš	gš	kd [kn]
*ky	[kV _{2r}]	kr	gš	gš	kš
*sr	[sV _{2r}] [sV _{2n}]	sr [sn]	sn	st sn	sd [sn]
*sy		<sr [sn]>	<sn>	<st sn>	sš
*šr	[šV _{2r}] [šV _{2n}]	šr [šn]	šn	št	šd
*šy		<šr [šn]>	<šn>	<št šn>	<šš>
*xr	[xV _{2r}] [xV _{2n}]	xr	xš	xš	xd
*xy		xr	<xš>	xš	xš
*pk [hypothetical]					
*kt	[kʲ]	ht			kt

ps	wi	ot	Om	Os	Da
*sp		sw		sp	sp
*šp			šp	šp	šp
*xp	[xV ₂ w]	xw	xp	xp	xp
*st					s:
*št	[šy]	št	št	št	yt
*xt		xt	xt	xt	xt
*sk	[sg]	sk	sk	sk	sk
*šk	[šg]	šk	šk	šk	šk
*i-	i	i	i	i	i
*e-	e	e	e	e	e
*a-	a	a	a	a	a
*o-	o	o	u	u	o
*u-	u	u	i	u	u
*?u	[?]o	[?]o	u	u	[?]o
* $\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
* $\frac{2}{2}$	$\frac{2}{2}$	$\frac{2}{2}$	$\frac{2}{2}$	[$\frac{2}{2}$]	$\frac{2}{2}$
* $\frac{u}{2}$	$\frac{u}{2}$	$\frac{u}{2}$	$\frac{u}{2}$	[$\frac{u}{2}$]	$\frac{u}{2}$
*i#	i;Q†	i;e†	i;e	i;e	i;e;a
*e#	e;Q	e	e;a	e;a	e;a
*a#	e;Q	e;a†	a	a	a
*o#	o;Q†	o	u	u	o
*u#	u	u	i	u	u
* A	ena	ena	ena	ena	ena

pS	Hi	Cr	Ma	Of	Bi	Tu
* kh						
*k, * ^c k, *k?	k	k; c ⁻ⁱ	k	k	k	k
*wk	wV/k	<wV/k>	pk	ak		
*w	w	w	w [m]; [†]	Q	Q	[m]
* ^c w	w	w	w [m]	b am	w; Q [†] [a]m	w [m]
*ww	aw; ūw [†]	aw; ūw [†]	w [m]	ab am	[a]m	?[a]m
*wh-	w	w	p	h	Q	wVh
*- wh (= -kw [?])	p	hp	p	m	m	
*ph			p	ph	p(V)h	p(V)h
*p, * ^c p, *p?	p	p	p	p	p/p~w	p
*wp	ap	ap	p	ap	p	p
*y, * ^c y	r; Q [†]	r; Q [†]	r [n]	j	y	y
*wy	wVr	wVr	[wVr] [mVn]	i; a [†]	ay	(wV)y [m]Vy
* ^c r, * ^c r	r; Q [†]	r; Q [†]	r [n]	d n	d r	Q [n]
*wr-	wVr	wVr	[wVr] [mVn]	ad; id an	ad; i ^o [a]n	y [mVn]
*-wr-	r w	r w	[mVn]	n	^o d n	[n]
*pr-				p(V)d		
*-pr-	wVr		[mVn]	n	n	[n]
*py [hy pothetical]						
*- yh -			t			
*t, * ^c t, *t?	t	s; s ^{-c, e}	t	t	t	t
*wt			pt	it	(i)t	wVt
*pt	wVt	wVs; wV ^s	pt	at	(i)t	(wV)t

pS	Hi	Cr	Ma	Of	Bi	Tu
*h-	h	h	h	h	h ~ Ø	h
*-h-	h; Ø †	Ø	h	←	h/w/y/Ø †	→
*-h	Ø	Ø	h	Ø	Ø	Ø
*p	p	(?)	p	(?)	(?)	(?)
*s, *cs	c	t; c -i	š	(a)f	s	(a)s
*s?			šk ?			
*ws [hy pothetical]						
*š, *cs, *š?	š	š	s	č	č	c
*wš	wVš	wVš	ps ?	ač	č	c
*x, *cx	x	x	x	s	x	x
*wx	[hypothetical]					
*pk	[hypothetical]					
*kp	[no exx]					
*kt	ht			k(V)t	k(V)t	k(V)t
*tp	/hp	/hp	/pt			
*tk	tVk/(h)k	/(h)k	tk		t(V)k	
*x?	x/hk	x/hk	k?	s	x	x

pS	Hi	Cr	Ma	Of	Bi	Tu
*kr	kVr	kVr; cVr	[kVr]		k(V)n	
*ky [no]	exx]					
*sr	cVr	tVr; cVr	[sVr] [sVn]	fd	sn	[sVn]
*sy [no]	exx]					
*šr	šVr		[sVr]		čd	
*šy			[sVr]			
*xr	xVr	xVr	[xVr]	s(V)d		
*xy _g					xy	
*xp				fp	sw~sp	sp
*šp	šVp/šp	/šp		čp		
*xp	xVp	xVp			xp	
*st					st	st
*št	/št	/št	st			
*xt			xt			
*sk	ck	c(V)k	šk		sk	sk?
*šk	šk		sk	čk; kč†	čk; kč†	c(V)k
*xk	xVk	xVc xVk/xc ⁻ⁱ	xk	sk	xk; k?	
*ps [no]	exx]					
*pš [no]	exx]					
*px [no]	exx]					
*ks	hkVc			k(V)f, f?	ks	k(V)s
*kš			ks	k(V)č	k(V)č	
*kx		k	kx	s?	x?	

pS	Hi	Cr	Ma	Of	Bi	Tu
*i-	i	i	i	i	i	i
*e-	e	e	e	e	e	e
*a-	a	a	a	a	a	a
*o-	o;ua	o;ua	o	o	o	o
*u-	u	u	u	u	u	u
*Pu	Pu	Pu	Pu	(P)u	(P)o;(P)u	(P)o
* $\frac{1}{2}$	i	i	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$
* $\frac{a}{2}$	a	a	$\frac{a}{2}$	$\frac{a}{2}$	$\frac{a}{2}$	$\frac{a}{2}$
* $\frac{u}{2}$	u	u	$\frac{u}{2}$	$\frac{u}{2}$	$\frac{u}{2}$	$\frac{u}{2}$
*i#	i	i;e	e;u;Q†	i	i	i
*e#	a	a;e	Q;a	i;e	i;e	i;e
*a#	a	a;e	a;Q	a	a	a
*o#			o			o
*u#	u	u(a);e	e?	u;o†	o;u†	o
* A	ena	ena	e	e	e	ena

Chart for Plotting
Siouan Isoglosses

Cr

Hi

Ma

Wi

Ot

Om

Os - Ka Qu

As
/ \

Te - Ya - Sa

Of Tu

Bi

Philological Methods

1

Cacaopera - Matagalpa

phonemes

p t k i u

b- d- a

s ʃ x ʋ

m(-) n

ɛ

-r-

w(-)

y(-)

895	M	Mendoza	} Cac.
1895	S	Sapper	
1910	L	Lehmann	
1855	N	Noguera	} Mat.
1909	V	Valle	

marginal sounds

é in one interjection

ʒ in loans

k̐ in one or two loans

phonetics

n #	nt ~ n · ~ n
p #	p ^m ~ p
t #	t ⁿ ~ t
s #	s ⁿ ~ s
-b-	b ~ β or else: /b/ may be spirantized after \acute{V}
ü final	u ^f ~ o (cac.) / o (mat.)
medical	u o
ĩ final	i ^f ~ e
medical	i i
a	y-, -y a ~ æ ~ ε

p (t) (k) s (m) n l may be slightly lengthened in $\acute{V}-V$

#p, t ~~are~~ \acute{V} are lenis, and are frequently transcribed by S as b, d; but by no one else.

Lehmann frequently hears stressed vowels and pretonic vowels in open syllables as long. None of the other sources marks length in any way. Since many of the forms are marked by L both with and without length, it is assumed to be non-distinctive.

		M	S	L	N	V
#p	- \acute{V}	p	p	p		
#p	- \check{V}	p	b	p		
#t	- \acute{V}	t	t(d)	t		
#t	- \check{V}	t	d	t		
#k	- V	c, k	c, qu, k	k		
#b	- V	b	b	b		
#d	- V	d	d(nd)	d		
s	\acute{V} - \check{V}	s	ss	s		
s	\check{V} - \acute{V}	s, ss	s	s		
p	\acute{V} - \check{V}	pp	p	p	p, pp	p
p	\check{V} - \acute{V}	p	p	p		
t	\acute{V} - \check{V}	t	t	t		
t	\check{V} - \acute{V}	t	t(d)	t		
k	V - V	c	c, qu	k		
b	\acute{V} - \check{V}	b, v	b, v	b		b
b	\check{V} - \acute{V}		b	b		
d	V - V	d		d		
m	V - V	m	m	m		m
n	\acute{V} - \check{V}	n	n, nn	n	n	
n	\check{V} - \acute{V}	n	n	n		
l	\acute{V} - \check{V}	l	l, ll	l		
	\check{V} - \acute{V}	l	l	l	l	

M

S

L

	p#	́_		pm	p ^m	p
	t#	́_	t	t, tn, t ⁿ	t ⁿ , t	
	k#	́_	c	c	k	
	n#	́_	n	n, nn, n̄	n, nt	n
	n#	̂_	n	n	n, nt	
	#š	-́		r, rr	ř, š	
	š	́_̂	rr	r, rr	řř	
	š	̂_́	rr	rr	řř, ř, rr, r(r)	
	š#	́_	r, s	rx, rrx	řř, ř, š ⁿ	
	#yá-		ye, ya	ye, ya	ye, ya	
	-uá-		o	ó	ó, o·wá	ué ^(-y)
	-iá-		ia	ié	i·é	ia
	-ai-		ay, ai	ai	ai	ai, éi
	-au-		áu	áu	á·u, áu	áu
	-ui-			uy	u·i	
	-iu-		ihú, eo		í·u, iú, io	
	yáu		yáu	yáu	yáo	ya ⁿ
extra	š š	̂_̂	rr	r	řř	yaú
extra	b	̂_̂	b	b	b	
marginal	#č-		ch	ch	š, č	
"	-č-		ch	ch	č	
"	k'			k'	k'	
"	é		é	é	é	

		M	S	L		
# x	- \check{v}			x		
x	$\acute{v}-\check{v}$	j	j	x		
# $\acute{i}-$		i	i	i		
# $\check{i}-$		i	i	i		
- $\check{i}-$		i	i	i	i	i
- \acute{i} #		i	i	i		
- \check{i} #		i, e	i, e	i, e	e	e
# $\acute{u}-$		u	u	u		
# $\check{u}-$		u	u	u		
- $\check{u}-$		u, o	u, o	u, o	o	o
- \acute{u} #		u	u	u		
- \check{u} #		u, o	u, o	u, o	o	o
- $\acute{u}k$ #		uc	uc	uk, ok		
# $-$	$-v$	h, Ø	Ø	Ø		

	b		N		V	
	M	S	L			
-sw-			sw, zw			
-lb-	lb		lb, lw			
-tk-		tk	tk, tk			
-nd-	nd		nd			
-tb-	db	tp	tb	tb		
-kt-		t	kt	ct		
-sn-	sn	sn	sn			
-lk-	lc, lk	lc	lk			
-sm-	sm	sm	sm			
-nk-	nk		gk			
-sk-	sk		sk			
-nt-	nt	nt		nt	nt	
#dr-				dr	dr	
-hy-				ji		

Tapachulteco

7

probable phonemes

p t ɸ ɕ k ʔ

ɣ h

m n

w ɣ

i ʌ u ɨ

e a o

M	Mendoza (by Sapper)	ca 1920
S	Sapper	ca 1890
K	Krause	ca 1910
R	Rieke	ca 1900
J	Johnston	ca 1880

Tapachulteco

8

h

M

S

K

R

J

k -i/e

qu(k')

k'/qu(k'u)

(qu)

(cu)

qu

k -a/o/u/ɛ

g(c/k(c'))

c/k'(h,k)

c/g

c(g)

c/g

k -#

c/k

c/k

g/c

c/ɔ

que/tca/c (co,

~~h~~

h v-v

j(h)

(j)h

j

h(f)

j(h)

h v'-c

j

j

(j)

h v''-c

(x,ɔ)

j(ɔ)

ɔ

j(ɔ)

ɔ

p

p/b(v)

p/b

p/b(pf)

p/b

p/b

t

t/d

t/d

t

t

t

m

m

m

m

m

m

n (non-final)

n

n

n

n

n

i

i

i

i

i

i

e

e

e(è,ö)

e

e

e

a

a

a(a')

a

a

a

o

o

o(u)

o

o

o(u)

u

u

u(u')

u

u(o)

u(o)

n -#

ng/n(m)

ng/n

n

n(m)

n(m,nt)

h	m	s	k	r	j
✓	✓	✓	✓	✓	✓
✓ -#	v	v	v(Vg)	v	v(Vg)
✓ #-	v	v	v	v(gV)	v/h

unmarked stress is assumed to follow the rules of spanish orthography

ɸ	#-, V-V	} tz(ts) tz	z(s)	ts	} z/ch x/ts	
ɸ	-C, -#					
ɸ						
ɸ		ch	ch	—	(tx, ch) ch	
ɸ		x	x(s)	x	x	ch/z/c (xch, x)
y	#-, V-V	y	y	} y	y(j)	y/ll
y	-C, -#	i(y)	i(y, 'i)			
w	#-V, V-V	vu/v(u)	v/u	—	—	(hu, gü)
w	-C, -#	u	u	u	(u)	u(hu)
ɸ	✓-C	Q/j(c)	(k/c, t)	(g)	(g)	(t, c)
ɸ	-#	Q(✓)	Q/✓	Q(t)	Q(g)	c/t/Q
✓ _i	-C	V(V, V _i)	V _i V _i /V ^c	V	—	V _c
✓		o	o(ö)	o	o(u)	u/o(un)
✓		e/ó/o	ö/o	—	—	e(i, o)

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Languages of Middle America

T. Kaufman

Languages and Families of Middle America (I-XXIII)

[A. macro-Hokan superstock]

I. Seri [isolate] (Driver: Oasis; Kroeber: Southwest)

II. Tlapanecan family 8c.

a. Tlapaneco

b. Subtiaba [intrusive outlier] (Driver: Circum-Carribean)

III. Tequistlatec[an] (Coastal, Highland var's.)

IV. Jicaque [isolate] (Driver: Circum-Carribean)

[B. macro-Aztec-Tanoan superstock]

V. Uto-Aztecan family 47-50c. (in part: the traditional Sonoran and Aztecan 'branches')

E. Piman group 6-7c. (Driver: Oasis; Kroeber: Southwest)

1. (a) Papago (Pima and Papago var's.), Lower Pima;

(b) Tepecano [intrusion]

2. (a) Northern Tepehuán; (b) Southern Tepehuán [intrusions]

F. Yaquian group 21c. (Driver: Oasis)

1. Tarahumara-Guarijío 7c.

a. Tarahumara [intrusion]

b. Guarijío [Eng. Varohío]

2. Cáhita-Ópata 11c.

a. Cáhita (Yaqui, Mayo var's.)

b. Ópata (Eudeve, Jova var's.)

G. Coran group 11c.

1. Cora

2. Huichol

H. Aztecan group [intrusions] 13c.

1. Azteco 12c. (sev. dial's., e.g. Isthmus, Highland, Puebla, Michoacán)

2. Pochuteco

VI. Quitlatec [isolate]

[C. macro-Penutian superstock]

VII. Tarasco [Eng. Tarascan][isolate]

[D. macro-Mayan superstock]

VIII. Totonacan family 26c.

A. Totonaco [Eng. Totonac](sev. dial's., e.g. Highland, Northern)

B. Tepehua

IX. Mixe-Zoque family 35c.

A. Zoque group

1. Zoque (Chiapas and Oaxaca var's.)

2. Sierra Popoluca

3. Texistepec Popoluca

B. Mixe group

1. Mixe (Western and Eastern var's.)

2. Sayula Popoluca

3. Oluta Popoluca

4. Tapachulteco

X. Mayan family 36-39c.

A. Huastecan group [outliers] 10c.

1. Huasteco (Potosino and Veracruzano var's.)

2. Chicomucelteco

B. Yucatecan group 6c.

a. Yucateco (Yucateco and Itz'á var's.)

b. Lacandón

c. Mopán

C. Cholan group 13c.

1. Chontal-Chol 7c.

a. Chontal

b. Chol

2. Chortí

D. Tzeltalan group 18c.(?)

1. Tzotzil-Tzeltal 7c.

a. Tzotzil

b. Tzeltal

2. Tojolabal

E. Kanjobalan group 15c.

1. Chuj

2. Kanjobal-Jacalteco

a. Kanjobal (Kanjobal and Solomeco var's.)

b. Jacalteco

3. Motocintleco

F. Mamean group 21c.(?)

1. Ixil

2. Aguacateco-Mam 16c.(?)

a. Aguacateco

b. Mam

G. Quichéan group 8c.

a. Uspanteco

b. Quiché

c. Achí (Rabinal and Cubulco var's.)

d. Cakchiquel (Cakchiquel and Tzutujil var's.)

H. Kekchían group 19c.

1. Pocomam-Pocomchí 11c.

a. Pocomam

b. Pocomchí

2. Kekchí

[E. macro-Penutian, macro-Mayan, or macro-Chibchan superstock]

XI. Xincan family 17c.

1. Chiquimulilla

2. Yupiltepec

(XII-XV; Driver: Circum-Carribean)

XII. Lenca family 30c.

A. Lenca

B. Chilanga

[F. macro-Chibchan superstock]

XIII. Paya 10c. [isolate]

XIV. Mísquito-Sumu family 43c. (+ Mat)

1. Mísquito

2. Sumu[an] 11c. (Sumu, Ulua and Taguasca var's.)

XV. Matagalpa 10c.

a. Matagalpa variety (A)

b. CaGaopera variety (B)

[G. macro-Oto-Mangue superstock]

XVI. Otomí-Pame family 60c. (?)

A. Pamean group 36c.

1. Chichimeco

2. North Pame; South Pame 18-20c.

3. Matlatzinca; Ocuilteco (C)

B. Otomían group 16c.

1. Otomí 9c. (sev. dial's., e.g. Eastern, Mezquital,
St. of México)

2. Mazahua

XVII. Popolocan family 24-25c.

A. Mazateco 10c. (sev. dial's., e.g. Highland, Lowland)

B. Chocho-Ixcateco group 13c.

1. Chocho

2. Popoloca [Eng. Popoloc]

3. Ixcateco

XVIII. Mixtecan family 43c; 45-49c. (+ Amz)

A. Trique

B. Cuicateco-Mixteco 25c.

1. Cuicateco

2. Mixteco 15c. (sev. dial's., e.g. Highland, Lowland,
Eastern, Gueriero)

XIX. Amuzgo [isolate]

XX. Chinantec[an] 15c. (Lalana, Palantla, Ojitlan, Quiotepec, Usila
var's.)

XXI. Zapotecan family 24c.

A. Zapoteco 14c. (sev. dial's., e.g. Valley, Isthmus, Highland)

B. Chatino

XXII. Huave [isolate]

XXIII. Manguean family [intrusions] 13c.

a. Chiapaneco

b. Mangue [outlier](Driver: Circum-Carribean)

Notes:

var.	variety
c.	centuries of divergence, from Swadesh 1956-1962
+	including
(?)	I think the figure is excessive
sev.	several
dial.	dialect
e.g.	for example

Subdivisions marked a, b imply rather weak differentiation;
 those marked 1, 2 imply rather strong differentiation;
 those marked A, B denote the major branches of a family.

Language names ending in -eco are normally Anglicized to -ec.

-[an] means that it is unclear whether the name refers to a
 strongly diversified language or to a weakly diversified
 family.

An Oto-Manguean stock or superstock including XVI-XXII is
 generally accepted, but the subclassification of XVII-XXII is in
 dispute. This is the only superstock which has been validated
 by published phonological reconstruction.

There is general agreement on the Hokan affinities of I-III,
 and on a special relationship of I to the Yuman family. IV is
 grouped with Hokan by Greenberg and Swadesh.

A macro-Mayan stock or superstock including VIII-X seems
 reasonable to Kaufman, McQuown, and Swadesh among others, but is
 by no means generally accepted.

A Misumalpan stock including XIV and XV has been proposed, and
 seems reasonable to Mason, Swadesh, and Kaufman, apparently also McQuown.

Those who have worked most thoroughly on languages of South America lump XIII-XV with the Chibchan family to form a macro-Chibchan superstock; cf. Mason, Greenberg, Swadesh.

Many see a special relationship between XI-XII; Mason and Swadesh link them with 'macro-Mayan' or 'macro-Penutian' (which are not necessarily conceived as mutually exclusive); Greenberg links Lenca to 'macro-Chibchan' and says nothing of Xincan.

According to Driver's analysis of North America into culture areas, I and V E-F belong to the Oasis area; Kroeber's analysis places I and V E in his Southwest area. Driver and the authors of the Handbook of South American Indians assign XII-XV to the Circum-Caribbean area, but Kroeber to Middle America. The remainder of the languages are assigned by both Kroeber and Driver to Middle America (Driver Meso-America).

I have defined Middle America in such a way as to avoid breaking up the territorial continuity of Uto-Aztec. There is general agreement that the area included shares more cultural features with Middle America in its minimal extent than with any other adjacent area. Kroeber's Middle America extends somewhat past XIV and XV into the area of the Chibchan family, but since it would be impossible to include the whole of the geographically continuous part of the Chibchan family in anybody's definition of Middle America, I have drawn the line at the Eastern limit of XIV and XV. In this way, almost all of the identified outliers of Middle American languages are also included.

Whatever is underlined in the preceding listing is the form entered on my map of Middle American languages.

An Alphabetical Listing of Middle American Language
and Tribal Names (and Place Names where they Enter
into Language Names) with Specification of Angliciz-
ing Pronunciation and Classification Coding. [Unclas-
sified extinct languages not listed]

+ = reported extinct during or before the 19th c.

Rules for interpreting phonemic symbols:

1. vowel triangle:

i		u
I		U
e	ə	o
ɛ	ʌ	ɔ
æ	a	

2. $\check{V} = V$ or ə

æ = æ or a

æ = æ inalterable

e r = e or ɛ

o r = o or ɔ

t e = t or d

t = t inalterable

x = x or h

e# = e or i

n velar = n or ŋ

Achí /ačí/ XGc

Aguacatec /áwáketsk/ XF2a

Amuzgo /ámúzgo/ XIX

Aztec /æztæk/ VH1

Aztecan /æztéken/ VH

B ; see V

← Basiroa = Lower Pima VE1(a)

C-; see S-

Cacaopera /kakäopére/ XVb

Cáhita /káite/ VF2a

Cakchiquel /kækčĭkél/ XGd

Chañabal, Chaneabal = Tojolabal XD2

Chatino /čætíno/ XXIB

Chiapanec /čiápensk/ XXIIIA

Chiapas /čiápas/

Chichimec /čičimek/ XVIA1

Chicomuceltec /čikömüseltsk/ XA2

Chilanga /čĭlángé/ XIIB

Chimalapa = Zoque IXA1

Chinantec /činentsk/ XX

+Chinipa = Tarahumara VF1a

Chiquimulilla /čikĭmŭlíe/ XII

Chocho /čóčo/ XVIIIB1

Puebla Chocho = Popoloc XVIIIB2

Chol /čól/ XC1b

Chontal /čontál/ XC1a

Oaxaca Chontal = Tequistlatec[an] III

Tabasco Chontal = Chontal XC1a

+Chorotega /čorōtége/, Choluteca = Mangue XXIIIB

Chortí, +Choltí XC2

Chuchón = Chocho XVIIB1

Chuj /čúx/ XE1

+Conicari = Cáhita VF2a

Cora /kóre/ VG1

Cubulco = Achí XGe

Cuicatec /kwíketsk/ XVIIIIB1

Cuitlatec /kwítletsk/ VI

+Diri(a) = Mangue XXIIIB

Eudeve = Ópata VF2b

Gu-; see Hu-

Guarijío /warĩxío/ VF1b

+Guasave = Cáhita F12a

+Guazápar = Guarijío VF1b

Guerrero /gěréro/

H-; see J-

Heve = Eudeve VF2b

Hu-; see Gu-

Huastec /wástek/ XA1

Huastecan /wastéken/ XA

Huave /wáve/ XXII

Huichol /wičól/ VG2

-i; see -e

Itzá = Yucatec XBa

Ixcatec /ĩšketsk/~ /isketek/ XVIIIB3

Ixil /išíl/ XF1

J-; see H-, S-, and X-

Jacaltec /xákáltɛk/ XE2b

Jicaque /xikáke/ IV

Jonaz = Chichimec XVIA1

Jova = Ópata VF2b

Kanjobal /kanxobál/ XE2a

Kekchí /kekčí/ XH2

L ; see R

Lacandón /lækǎndón/ XBb

Lenca /lénke/ XII(A)

Macoyahui = Cáhita VF2a

Mam /mám/ XF2b

Mamean /mámien/ XF

+Mangue /máŋge/ XXIIIb

Maribi(o) = Subtiaba IIb

Matagalpa /mætegǎlpe/ XV(a)

Matlame = Ocuiltec XVIA3

Matla(1)tzinca /mætlɛtsínke/ XVIA3

Maya /máye/ = Yucatec XBa

Mayan /máyen/ X

Mayo /máyo/ = Cáhita VF2a

Mazahua /mǎsáwe/ XVIB2

Mazatec /mǎsetɛk/ XVIIA

Meco = Chichimec XVIA1

Mexicano = Aztec VH1

Michoacán /míčuekán/

Michoacano = Tarascan VII

Mísquito /mískito/ XIV1

Misumalpan = Mísquito-Sumu (XIV) + Matagalpa (XV)

Mixe /míxe/ IXB(1)

Mixe-Zoque /míxe sóke/ IX

Mixtec /míštek/~místek/ XVIIIIB2

Mixtecan /míštéken/~místéken/ XVIII

Mopán /mopán/ XBC

Motocintlec /motóšintlek/, Mototzintlec XE3

Mosquito = Misquito XIV1

Nagrandá = Subtiaba IIb

Nahua /náwā/, Náhuat(1) /náwat(1)/ = Aztec VH1

Nayarit /nayārít/

Nayarit(a) = Cora VG1

Nevome = Lower Pima VE1(a)

+Nicarao, Niquira = Aztec VH1

+Nicoya = Mangue XXIIIB

Níó = Cáhita VF2a

-o; see -u

Oaxaca /wǎxáke/

+Ocoroni = Cáhita VF2a

Ocuiltec /okwíltek/ XVIA3

Oluta /olútē/ IXB3

Ópata /ópētē/ VF2b

+Orotiña = Mangue XXIIIB

Otomí /otōmí/ XVII1

Pame /páme/ XVIA2

Papago /páepago/ VE1(a)

Paya /páyē/ XIII

Petén = Yucatec XBa

Pima /píme/ = Papago VE1(a)

Pima Bajo = Lower Pima VE1(a)
 Lower Pima VE1(a)
 Pipil = Aztec VH1 /pipíl/
 Pirinda = Matlatzinca XVIA3
 Pochutepec /počútsk/ VH2
 Pocomam /pokomám/ XH1a
 Pocomchi /pokomčí/ XH1b
 Popoloc /pópölek/ XVIIB2
 Popolocan /popö16kən/ XVII
 Popoluca /popö1úke/ IX; A2-3, B2-3
 Puebla /pwéble/

 Qu-; see K-
 Quiché /kičé/ XGb

 R ; see L
 Rabinal = Achí XGc
 Rarámuri = Tarahumara VF1a

 S-; see C-
 Sayula /sayúle/ IXB2
 Seri /séri/ I
 Sierra /siére/
 +Sinaloa /sinel6e/ = Cáhita VF2a
 Solomec /sól6mek/ = Kanjobal XE2a
 Sonora /senóre/
 Subinhá = Tojolabal XD2
 Subtiaba /sUbtíábe/ IIa
 Sumu /súmu/ XIV2
 Supanecan = Tlapanecan II

- Taguasca, Tahuajca = Sumu XIV2
 Tapachultec /tæpəčúltek/ IXB4
 Tarahumara /taräumäre/ VF1a
 Tarascan /teräskən/ VII
 Teco = Cuitlateco VI
 Tegüima = Ópata VF2b
 +Tehueco = Cáhita VF2a
 +Temori = Tarahumara VF1a
 +Tepahue = Cáhita VF2a
 Tepecano /tspěkáno/ VE1(b)
 Tepehua /těpéwe/ VIIIB
 Tepehuán /tspěwán/ VE2
 Tequistlatec /těkís(t)lətek/ III
 Tequistlatecan /těkís(t)lətéken/ III
 Texistepec /teksístěpek/ IXA3
 Tlapanec /tlápenek/ IIa
 Tlapanecan /tləpeněken/ II
 Tojolabal /toxöläbál/ XD2
 Totonac /tótənæk/ VIIIA
 Trique /tríke/ XVIIIIA
 Tz-; see Z-
 Tzeltal /tsəltál/ , Tzentäl XD1b
 Tzotzil /tsotsíl/ XD1a
 Tzutujil /tsutsŭxíl/ = Cakchiquel XGd
 Ulua /úlue/ = Sumu XIV2
 Uspantec /úspāntek/ XGa
 Uto-Aztecan /yùto əztéken/ V
 Varohío = Guarijío VF1b

X-; see J-, S-

Xinca /šínke/ XI

Yagui /yáki/ = Cáhita VF2a

Yopi, Yope = Tlapanec Ila

Yucatec /yúketek/ XBa

Yupiltepec /yupíltěpsk/ XI2

Z-; see Tz-

Zapotec /zəpetek/ XXIB

Zapotecan /zəpetéken/ XXI

+Zoe = Cáhita VF2a

Zoque /sóke/ IXA(1)

+Zuaque = Cáhita VF2a

Extinct forms of Middle American speech generally classified as
Uto-Aztecan, but not reliably placed in any specific subgroup

- + Acaxée
- + Cazcán
- + Huite
- + Moꝛorito
- + Xixime